# ESX Firewall Switching Agent Guide

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MANU 0378-01

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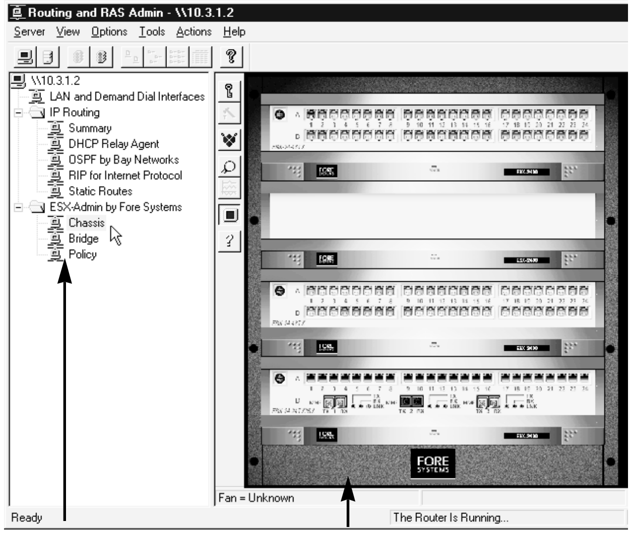
## Navigating Using the ESX-Admin Interface

The Firewall Switching Agent Guide provides flowcharts that describe navigation paths. These paths help you access configuration menus and wizards. It also gives procedural steps and examples to show how to configure the system.

| **Flowchart Shape** | **Represents** |
|---|---|
| In Tree View | ***Starting point for navigation****–often tree view or display view, and occasionally navigation begins with a main configuration page.* |
| Right Click Chassis Icon<br>Select Configure Chassis | ***A navigation step****:*<br>• *Right click–displays a pull down menu*<br>• *Select–selects an icon or menu item using one of the following techniques:*<br>  • *Left mouse click–picks a single item*<br>  • *Drag click–activates a selection window*<br>  • *Shift click–selects contiguous icons*<br>  • *Control shift click–selects non-contiguous icons* |
| Modify Chassis Configuration Page | ***A procedure or task*** |

## Example: Tree View and Chassis Display



***Tree View***
*Select configuration menus and view status*

***Display View***
*Enter editing mode, select ports, and view system status.*

In the example above, clicking the *chassis icon*, shown in the *tree view*, fills the *display view* with a graphic view of the chassis. Navigation starts by positioning the mouse in either the tree view or in the display view.

**To select multiple consecutive ports:**
When configuring ports on the switch you may want to select multiple ports and configure them identically, To select multiple, consecutive ports, press the CTRL key while you hold down the left mouse button activating a lasso, and use the lasso to select multiple consecutive ports.

### Accessing Context-sensitive and Topic Online Help

- To access ***context sensitive online help***, first click on the ? icon on the ***horizontal menu bar*** at the top of the screen. When a ? appears next to the mouse pointer, click on an area in a dialog box to display a help message for a field, a control button or area within the dialog box.
- To access ***ESX-Admin help topics***, click on the ? icon on the ***vertical menu bar*** at the top of the screen. An index of help topics will appear on the screen

### Using Icons to Access ESX-Admin Commands

The *vertical menu bar* contains seven icons, stacked vertically in the border area between the tree view and the display view. By clicking an icon you can access commands directly from the main menu.. A description of menu bar icons and their associated commands follows:

**Edit Mode -** ***toggle edit mode & display edit menu***

**Configure -** ***set switch/port parameters***

**Edit Policy -** ***configure policies on the switch***

**Show Port Info -** ***display port statistics***

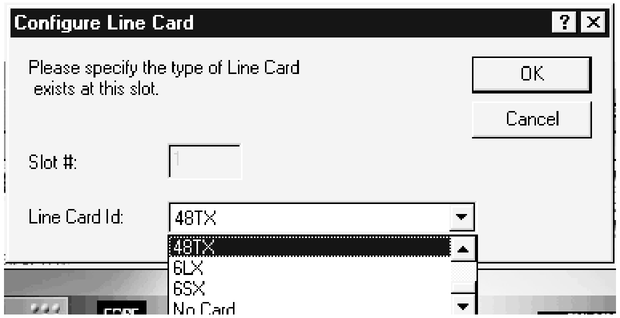
**ESX-Mon -** ***access the monitoring facility***

**Scale Window -** ***expand or shrink the display***

**Online Help -** ***view ESX-Admin help topics***

### Example: Vertical and Horizontal Menu Bars

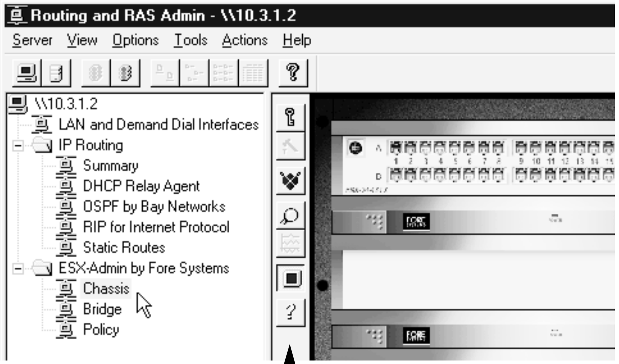
***Horizontal Menu Bar ? Icon****- Context-sensitive Online Help*


Configure Line Card

Please specify the type of Line Card exists at this slot.

Slot #: 1

Line Card Id: 48TX


Routing and RAS Admin - \\10.3.1.2

***Vertical Menu Bar Icons -*** *Short cut to commands*

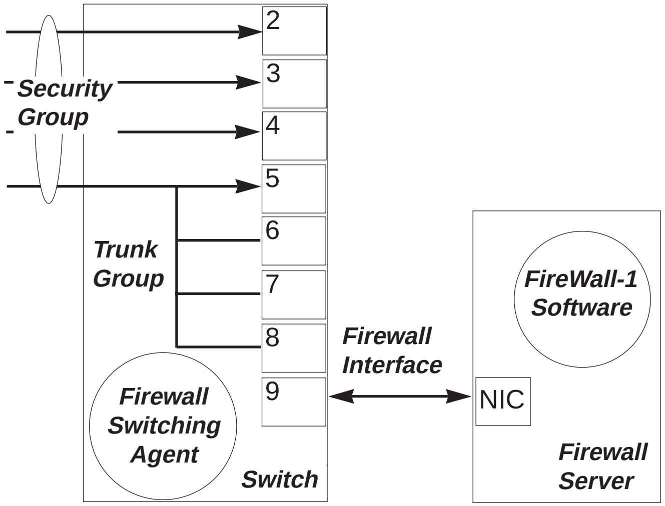
The Firewall Switching Agent Guide provides an overview of firewalls, describes requirements for configuring a firewall server, and provides detailed procedures that will help you set up a firewall on your network.

The Firewall Switching Agent Guide contains the following sections:

## 1–Firewall Overview

A FORE Systems firewall is made up of these components shown in the example below and described in the following text:

- Firewall Switching Agent
- Firewall interface
- Firewall server
- FireWall-1TM software
- Security group
- Switch
- Trunk Group



**Example: Firewall Component Overview**

**Firewall Switching Agent**–A combination of ASICs, ASIC microcode, and management software which, together, implement the Fast Path forwarding functions of CheckPoint's FireWall-1TM software.

**Note:** FireWall-1TM is a Registered Trademark.

**Firewall interface**–a bidirectional connection you establish between a port on the *switch* (*Port 9 in the example)* and a NIC on the *firewall server*.

- The *Firewall Switching* Agent forwards each packet that requires further inspection than Fast Path can provide across the *firewall interface* to the *FireWall-1 software*
- The *FireWall-1TM software* validates the packet against its rule/policy database, and if the packet passes inspection, the *firewall server* returns the packet to the switch

**Firewall server**–an NT or Unix device running *FireWall-1 software.*

**FireWall-1 software**–Check Point's *FireWall-1* receives frames requiring closer inspection from the *Firewall Switching Agent*, performs firewall checks and sends frames back.

**Security group**–a group of ports on the switch that shares a pool of firewall servers. A *security group* can include trunk groups along with individual ports. You can include all ports on the switch in a single security group or establish up to 16 security groups on a single switch.
In the example, switch ports 2 - 4 and the *trunk group* (ports 5 - 8) are members of the *security group.*

**Note:** The *Firewall Switching Agent* checks each frame that is received on an input port of a security group. This implementation may differ from other firewall security implementations.

**Switch**–A FORE Systems ESX-2400 or ESX-4800 Switch.

**Trunk Group** –Two or more ports seen by the switch as a single, logical port. A trunk group can join a *security group*.

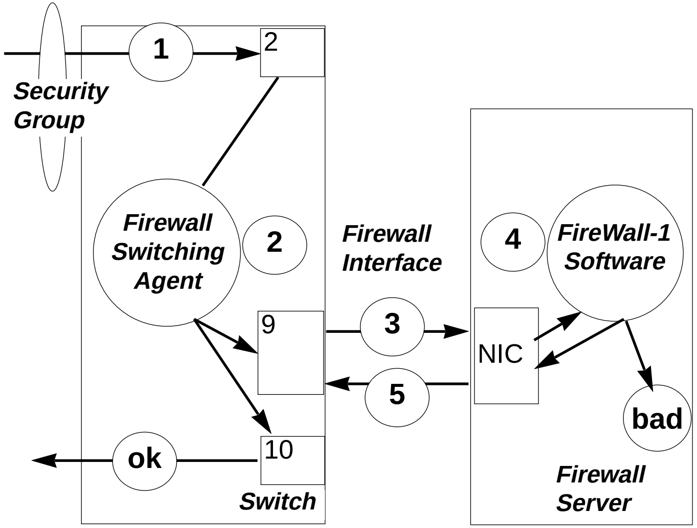
## Firewall Packet Flow

The following example shows the packet flow through the firewall, describing the sequence of events that occur when a frame is received by port 2, a member of a security group, destined for an interface attached to port 10.

As in the previous example:

- Port 9 on the switch provides the firewall interface along with the NIC in the firewall server
- The Firewall Switching Agent running in the switch and the FireWall-1™ software running on the firewall server perform validation checking

**The Sequence of Events:**



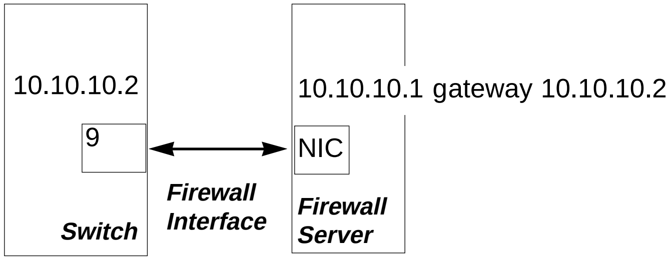
**Example: Firewall Packet Flow**

1. Port 2 receives a packet destined for an interface attached to port 10.
2. The Firewall Switching Agent inspects the packet:
   - If OK the packet is forwarded out on port 10
   - If the packet requires further inspection, step 3 occurs
3. The packet is sent across the firewall interface to the firewall server via port 9.
4. The FireWall-1™ software validates the packet:
   - If not OK the packet is dropped
   - If OK, step 5 occurs
5. The packet is sent across the firewall interface to the switch via the NIC and forwarded by the switch on port 10, the packet’s intended destination

## 2–Setting up a Firewall Server

Before you configure the Firewall Switching Agent, set up the Firewall Server by completing the following tasks:

**1.** Connect an Ethernet cable between a network adapter in the firewall server and a port on the switch.
**Note**: This cable forms the firewall connection between the switch and the firewall server. To establish a secure interface, attach the switch and the firewall server, directly, rather than via a hub.
**Caution**: The port to which you connect the cable on the switch can not be assigned to a security group.



**Example: Setting Up Switch and Firewall Server IP Addresses**

**2.** Set up the IP addresses on the switch and the firewall server that are required to establish the firewall interface between the switch and the firewall server. See the example and following text for details.
**Note**: The IP addresses for the switch and the firewall server that form the firewall interface must be on the same subnet.

- On the switch, assign an IP Address to the firewall interface port on the switch.
  *In the example, Port 9's IP address = 10.10.10.2*
  *See Chapter 7 of the* ***ESX Switch Administrator's Guide*** *for details on assigning IP addresses to ports.*
- On the firewall server: assign an IP Address to the firewall server's NIC, and assign a default gateway pointing to the IP address of the switch's firewall interface port.
  *In the example, the NIC's IP address = 10.10.10.1 and the NIC's default gateway = 10.10.10.2*
  **Note**: Define the IP addresses for the switch and the firewall server that form the firewall interface before you create a security group.

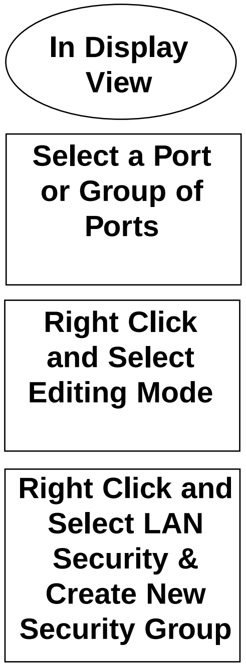
**3.** After you set up the IP addresses on the switch and the firewall server, assign IP addresses to the members of the security group that you will create in the next section.

# 3–Creating a Security Group

You can create a security group by following this three-part procedure:

- Select a port or group of ports
- Access the LAN Security Configuration page
- Configure a LAN Security Server

**Note:** You can include all the ports on the switch, including trunk groups in a security group, and you can define up to 16 security groups on a single switch.



**In Display View**

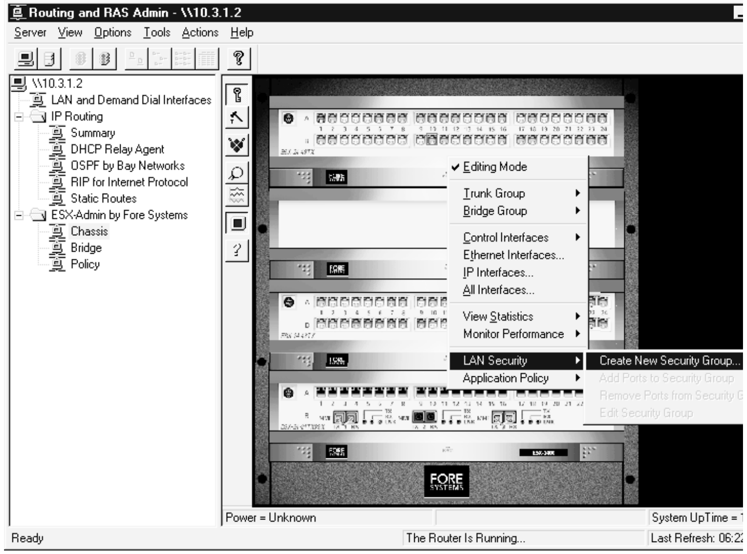
**Select a Port or Group of Ports**

**Right Click and Select Editing Mode**

**Right Click and Select LAN Security & Create New Security Group**

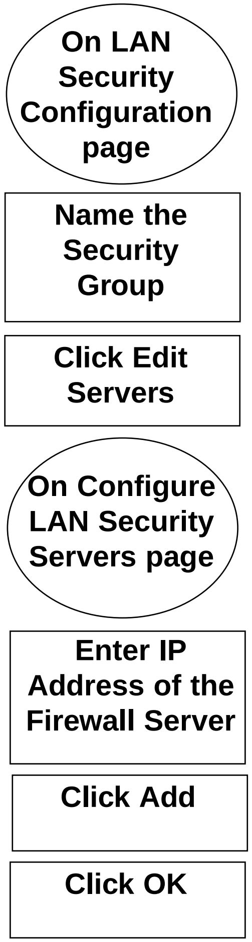
In the Display View:

1. Select a port or group of ports.
2. Right Click in Display View and select Editing Mode.
3. Right Click again in Display View and select LAN Security and Create New Security Group to display the LAN Security Configuration page.



# 3–Creating a Security Group (Continued)

Continue the process of creating a security group using the LAN Security Configuration page.



**On LAN Security Configuration page**

**Name the Security Group**

**Click Edit Servers**

**On Configure LAN Security Servers page**

**Enter IP Address of the Firewall Server**

**Click Add**

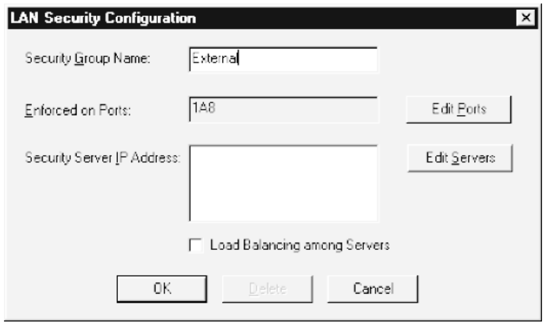
**Click OK**

On LAN Security Configuration page:

1. Name the Security Group.
2. Click Edit Servers to display the Configure LAN Security Servers page.

On Configure LAN Security Servers page:

3. Enter the IP address of the firewall server.
   In the example *10.10.10.1*
   **Note:** You can add multiple IP addresses if you have multiple firewall servers in a redundant configuration.
4. Click Add to update the Server Addresses field on the Configure LAN Security Servers page.
   **Note**: The IP address of the server you added will appear in the Servers Available: window.



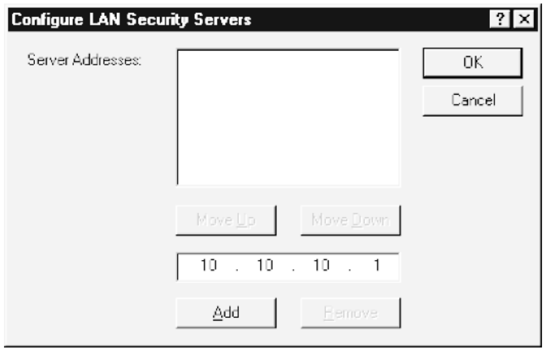
LAN Security Configuration

Security Group Name: External

Enforced on Ports: 1A8

Security Server IP Address:

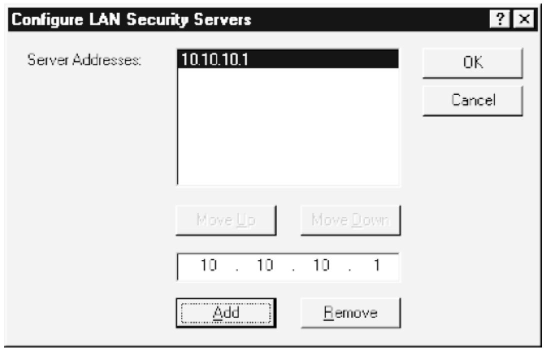
☐ Load Balancing among Servers



Configure LAN Security Servers

Server Addresses:

10 . 10 . 10 . 1



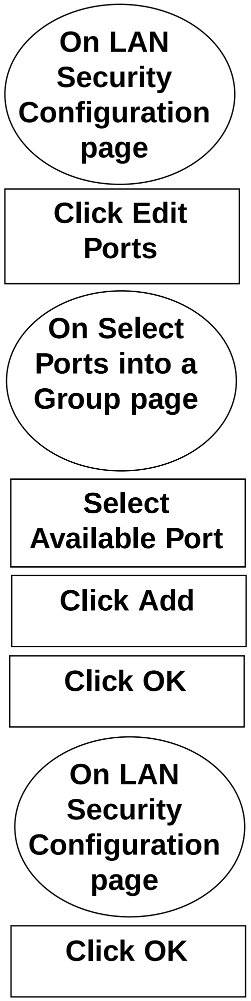
Configure LAN Security Servers

Server Addresses: 10.10.10.1

10 . 10 . 10 . 1

## 3–Creating a Security Group (Continued)

While you create a security group, you can add additional ports by:



**On LAN Security Configuration page**

**Click Edit Ports**

**On Select Ports into a Group page**

**Select Available Port**

**Click Add**

**Click OK**

**On LAN Security Configuration page**

**Click OK**

On LAN Security Configuration page:

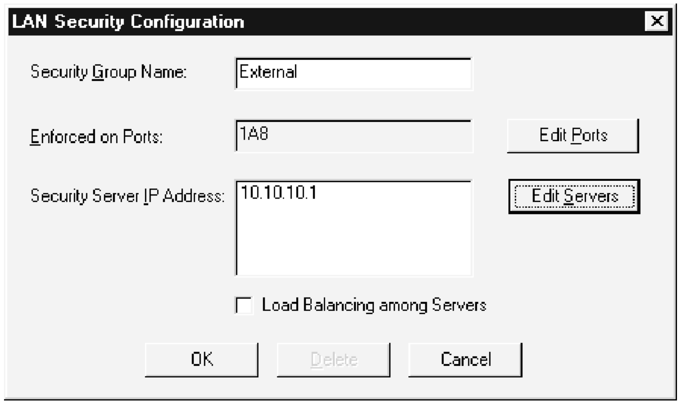
1. Click the Edit Ports button to display the Select Ports into a Group page.

On Select Ports into a Group page:

2. Select a port you want to add from the Available Ports: window.
3. Click Add.
4. Click OK to add the port and return to the LAN Security Configuration Page,

On LAN Security Configuration page:

5. Click OK to establish the new security group.



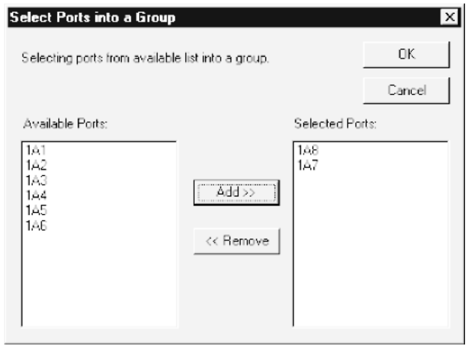
LAN Security Configuration

Security Group Name: External

Enforced on Ports: 1A8

Security Server IP Address: 10.10.10.1

☐ Load Balancing among Servers

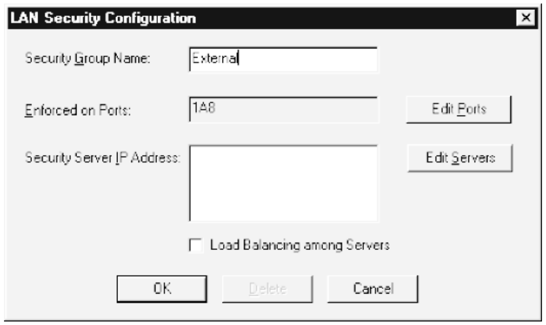


Select Ports into a Group

Selecting ports from available list into a group.

Available Ports: 1A1, 1A2, 1A3, 1A4, 1A5, 1A6

Selected Ports: 1A8, 1A7



LAN Security Configuration

Security Group Name: External

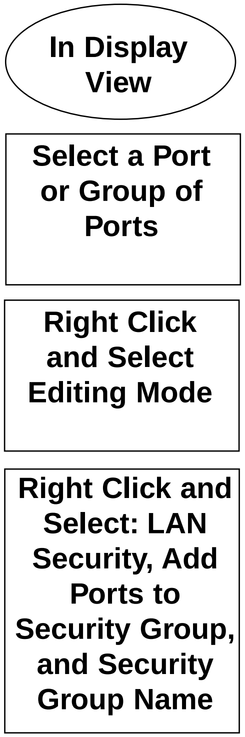
Enforced on Ports: 1A8

Security Server IP Address:

☐ Load Balancing among Servers

## 4–Adding Ports to A Security Group

After you create a security group, you can add additional ports.



In Display View

Select a Port or Group of Ports

Right Click and Select Editing Mode

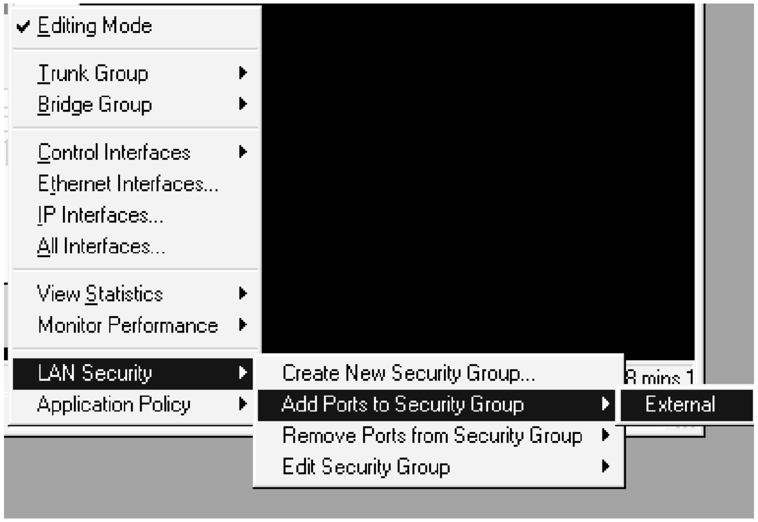
Right Click and Select: LAN Security, Add Ports to Security Group, and Security Group Name

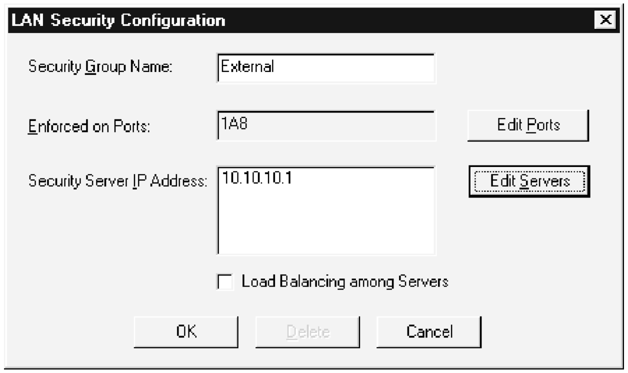
In Display View:

1. Select the port or group of ports you want to add to the security group.
2. Right Click in Display View and select Editing Mode.
3. Right Click again in Display View and select:
   - LAN Security
   - Add Ports to Security Group
   - Name of security group

   to display the LAN Security Configuration page–*the Port ID of the port you added will show up in the Enforced on Ports: window.*

**Note:** You also can add ports from the LAN Security page by clicking Edit Ports and following the instructions on the previous page.





LAN Security Configuration

Security Group Name: External

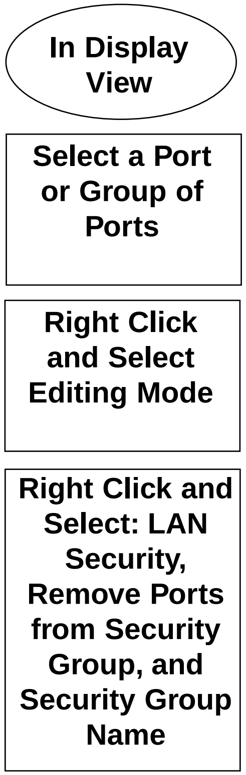
Enforced on Ports: 1A8

Security Server IP Address: 10.10.10.1

□ Load Balancing among Servers

## 5–Removing Ports from a Security Group

Follow this procedure to remove ports from a LAN Security Group:



In Display View

Select a Port or Group of Ports

Right Click and Select Editing Mode

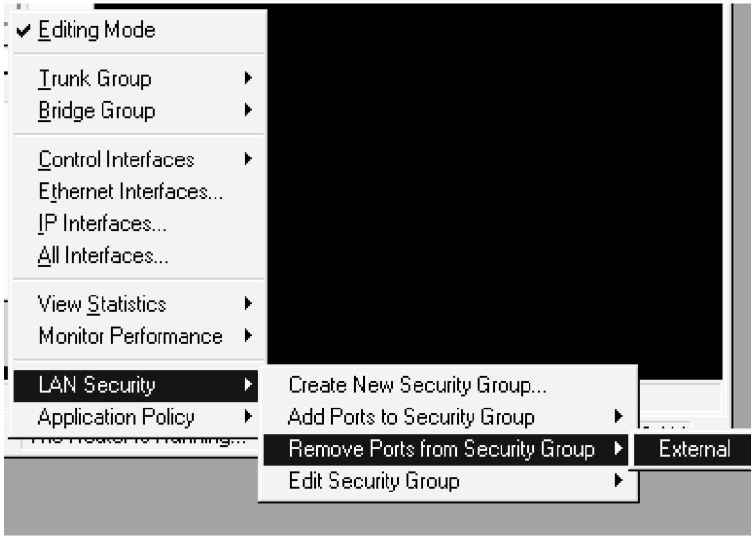
Right Click and Select: LAN Security, Remove Ports from Security Group, and Security Group Name

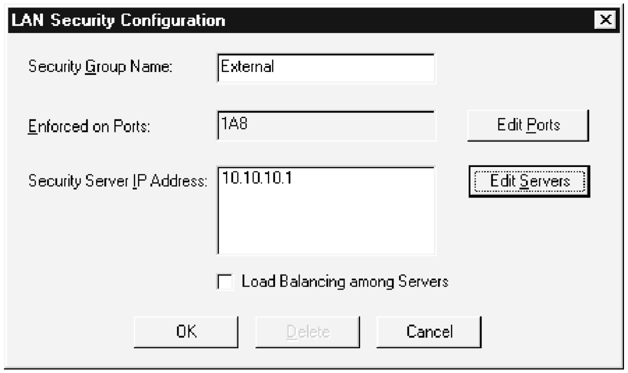
In Display View:

1. Select the port or group of ports you want to remove from the security group.
2. Right Click in Display View and select Editing Mode.
3. Right Click again in Display View and select:
   - LAN Security
   - Remove Ports from Security Group
   - Name of security group

   to display the LAN Security Configuration page–*the Port ID of the port you removed will* *<u>not</u>* *show up in the Enforced on Ports: window.*

**Note:** From the LAN Security page you can remove ports by following the instructions on the next page.





LAN Security Configuration

Security Group Name: External

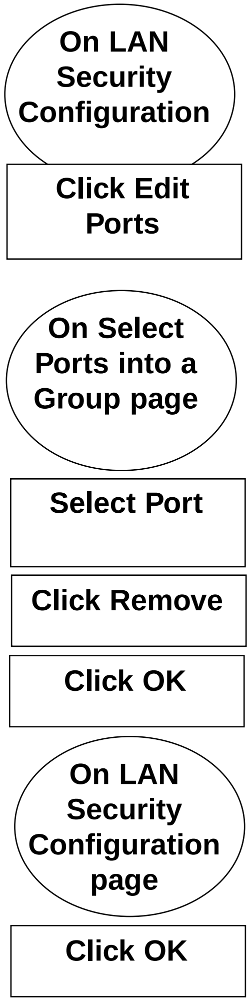
Enforced on Ports: 1A8

Security Server IP Address: 10.10.10.1

☐ Load Balancing among Servers

## 5–Removing Ports (continued)

Continue this procedure to remove ports from a LAN Security Group:



On LAN Security Configuration
Click Edit Ports
On Select Ports into a Group page
Select Port
Click Remove
Click OK
On LAN Security Configuration page
Click OK

On LAN Security Configuration page:

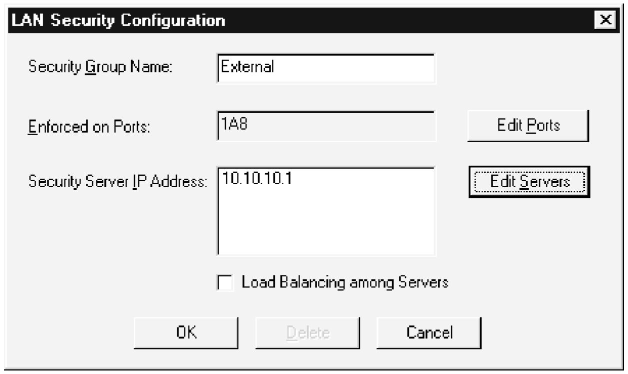
1. Click the Edit Ports button to display the Select Ports into a Group page.

On Select Ports into a Group page:

2. Select a port you want to remove from the Available Ports: window.
3. Click Remove.
4. Click OK to close and return to the LAN Security Configuration Page

On LAN Security Configuration page:

5. Click OK to have the new security group configuration take effect.



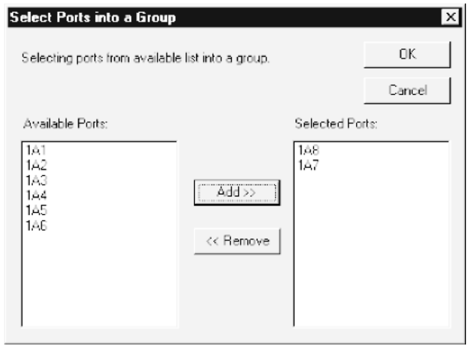
LAN Security Configuration

Security Group Name: External

Enforced on Ports: 1A8

Security Server IP Address: 10.10.10.1

□ Load Balancing among Servers

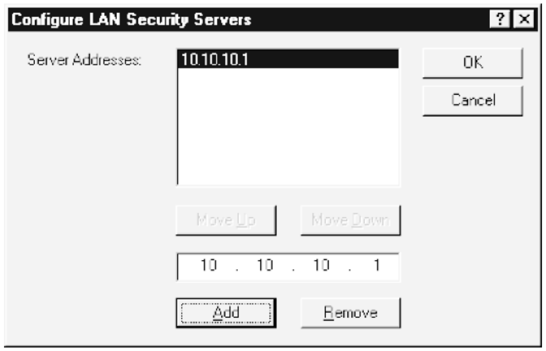


Select Ports into a Group

Selecting ports from available list into a group.

Available Ports: 1A1, 1A2, 1A3, 1A4, 1A5, 1A6

Selected Ports: 1A8, 1A7



Configure LAN Security Servers

Server Addresses: 10.10.10.1

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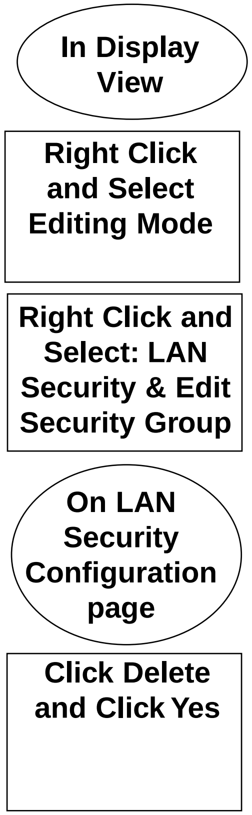
## 6–Deleting a Security Group

After you create a security group,follow this procedure to delete it.



**In Display View**

**Right Click and Select Editing Mode**

**Right Click and Select: LAN Security & Edit Security Group**

**On LAN Security Configuration page**

**Click Delete and Click Yes**

In Display View:

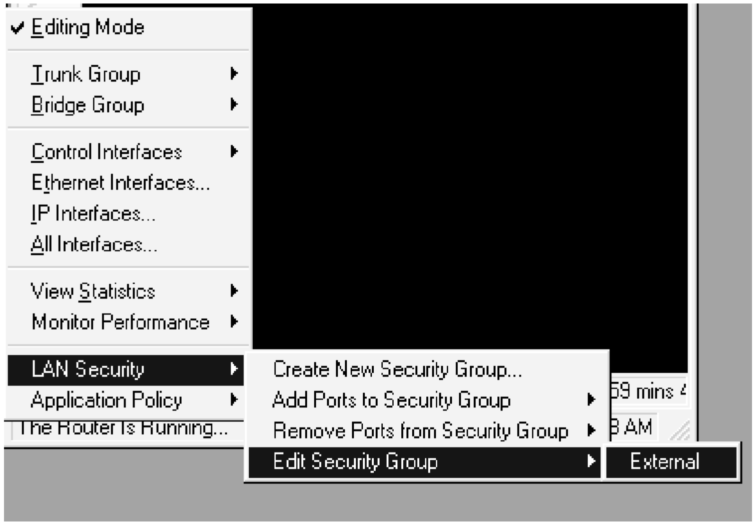
1. Right Click in Display View and select Editing Mode.
2. Right Click again in Display View and select:
   - LAN Security
   - Edit Security Group
   - Name of security group

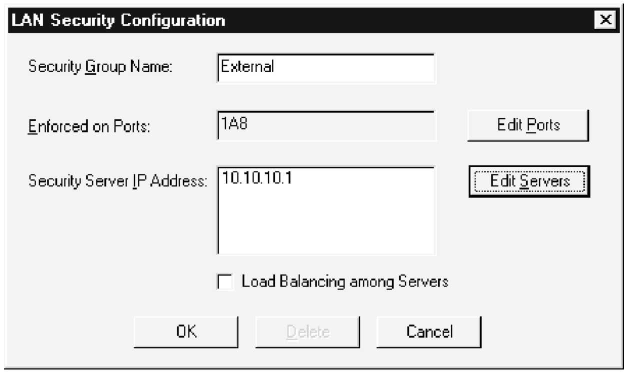
   to display the LAN Security Configuration page

   **Note:** The name of the security group you want to remove will appear in the Security Group Name: window.

On LAN Security Configuration page:

1. Click Delete to display a confirmation window and click Yes.





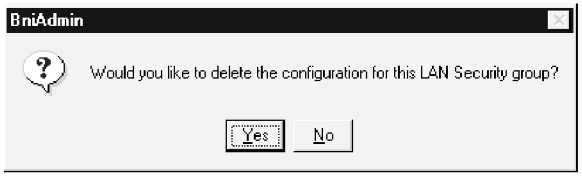
LAN Security Configuration

Security Group Name: External

Enforced on Ports: 1A8

Security Server IP Address: 10.10.10.1

☐ Load Balancing among Servers



BniAdmin

Would you like to delete the configuration for this LAN Security group?